



Infrasound refers to sound waves with frequencies below the range of human hearing, specifically below 20 Hz. While humans can't hear it, infrasound is produced by various natural and man-made sources and can travel long distances with minimal attenuation.

What it is:

Frequency:

Infrasound has frequencies below 20 Hertz (Hz), meaning the sound waves oscillate fewer than 20 times per second.

Human Perception:

Humans cannot consciously hear infrasound, but it can sometimes be felt as vibrations, particularly at higher intensities.

## Long-Distance Travel:

Infrasound waves can travel vast distances through the atmosphere with minimal loss of energy, making them useful for certain monitoring and detection purposes.

## Sources:

### Natural:

Earthquakes, volcanic eruptions, avalanches, waterfalls, severe weather, and ocean waves (like microbaroms) all generate infrasound.

### Man-made:

Large machinery, explosions, and even some musical instruments (like pipe organs) can produce infrasound.

### Animal Communication:

Many animals, including whales, elephants, hippos, and rhinoceroses, use infrasound to communicate over long distances.

## Applications:

## Monitoring and Detection:

Nuclear explosions: The Comprehensive Nuclear Test-Ban Treaty Organization (CTBTO) uses an International Monitoring System (IMS) with infrasound stations to detect nuclear tests.

Geological events: Infrasound can be used to monitor and locate avalanches, tornadoes, and even volcanic eruptions.

Structural health: Infrasound can help assess the structural integrity of buildings, dams, and bridges by detecting internal cracks or defects.

## Animal Research:

Studying infrasound helps scientists understand animal communication and behavior.

## Aerospace:

Infrasound can be used to study the behavior of rockets during lift-off and to detect aerodynamic instabilities in aircraft.

## Effects on Humans:

While infrasound itself is generally considered harmless at normal levels, some research indicates

that very high-intensity infrasound can potentially affect the central nervous system and cause discomfort or even physiological effects like nausea or disorientation.

However, these effects are typically associated with intensities far exceeding those normally encountered.

In conclusion, infrasound, though inaudible to humans, plays a significant role in both natural phenomena and various applications, from monitoring geological events to studying animal communication and potentially even assessing the integrity of man-made structures.

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<https://archive.org/details/@wazefapress>

Resources:

<https://pubmed.ncbi.nlm.nih.gov/16934315/>

<https://www.sciencedirect.com/topics/physics-and-astronomy/infrasound>

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<https://www.numberanalytics.com/blog/ultimate-guide-infrasound-acoustics>

<https://medium.com/the-future-is-electric/humans-evolved-with-infrasound-and-its-harmless-50d42fbc7377>

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<https://www.hearingprotech.com/pdf/en/>

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<https://www.epa.ie/environment-and-you/radiation/emf/what-is-emf/>